

4 identification number, wherein said passive RFID tags are configured to receive
5 and transmit signals; and
6 (B) a tag reader having means for transmitting a signal to said passive RFID tags and
7 means for resolving contention resolution between multiple RFID tags that
8 respond to said signal;
9 (C) wherein said passive RFID tags is configured to receive a signal from said reader,
10 evaluate said signal relative to said first and second permanent identification
11 numbers, and reply to said signal if appropriate.

Sub E1
Cond
2 93. The electronic inventory of claim 92, wherein at least one of said plurality of
passive RFID tags has a sensor; and means for transmitting the contents of said sensor.

Sub E1
Cond
2 94. The electronic inventory system of claim 92 wherein said signal is a clock signal,
and said tag reader emits a series of clock signals, each clock signal defining a time slot.

B
1 95. The electronic inventory system of claim 94, wherein each passive RFID tag counts
2 the clock signals and when the count is equivalent to said first permanent identification number,
3 transmits its identification ID to said tag reader.

1 96. The electronic inventory system of claim 95, wherein said tag reader accumulates
2 the identification numbers of each tag that responded.

1 97. The electronic inventory system of claim 96, wherein said tag reader polls all tags
2 that responded.

1 98. The electronic inventory of claim 92, wherein said first and second permanent
2 identification numbers are a tag identification number (Tag ID) and a manufacturer number,
3 wherein said signal is a clock signal, wherein each tag further comprises:
4 means for receiving a wake-up signal followed by a first clock signal;
5 means for incrementing a first tag count in response to said first clock signal;

6 means for transmitting the Tag ID assigned to the tag when said Tag ID corresponds to
7 said first tag count;
8 means for receiving a second clock signal;
9 means for incrementing a second tag count in response to said second clock signal; and
10 means for transmitting the manufacturer number assigned to the tag when said
11 manufacturer number of said each tag corresponds to said second count.

1 99. The electronic inventory of claim 92, wherein said first and second permanent
2 identification numbers are a tag identification number (Tag ID) and a manufacturer number,
3 wherein said signal is a clock signal, wherein said tag reader comprises:

4 means for transmitting a wake-up signal followed by a first clock signal;
5 means for incrementing a first reader count in response to first clock signal,
6 means for receiving a Tag ID transmitted by a tag in response to said first clock signal;
7 means for storing a given first reader count when more than one tag responds to said first
8 clock signal that corresponds to said given first reader count;
9 means for transmitting said given first reader count followed by a second clock signal; and
10 means for receiving a manufacturer number transmitted by a tag in response to said second
11 clock signal.

1 100. A method for conducting an electronic inventory of radio frequency identification
2 tags, wherein each tag is assigned a permanent identification ID, a manufacturing number and a
3 lot number, the method comprising the steps of:

- 4 (A) transmitting a first clock signal to a plurality of passive radio frequency
5 identification (RFID) tags, wherein each tag is assigned a first permanent
6 identification number and a second permanent identification number, wherein said
7 RFID tags are configured to receive and transmit signals; and
8 (B) a tag reader having means for transmitting signals to said plurality of RFID tags,
9 means for transmitting at least one signal to said RFID tags and means for
10 resolving contention resolution between multiple RFID tags that respond to said
11 signal;

12 (C) wherein said RFID tags are configured to receive a signal from said reader,
13 compare said signal relative to said two permanent identification numbers, and
14 reply to said signal if appropriate.

1 *SUB 105* 101. An automated, real-time electronic inventory system, comprising:
2 (A) a plurality of passive radio frequency identification (RFID) tags, wherein each tag
3 is assigned a plurality of identification numbers, wherein said RFID tags are
4 configured to receive and transmit signals; and
5 (B) a tag reader having means for transmitting a signal to said passive RFID tags and
6 means for resolving contention resolution between multiple RFID tags that
7 respond to said signal;
8 (C) wherein said RFID tags is configured to receive a signal from said reader, evaluate
9 one or more of said plurality of identification numbers, and reply to said signal if
10 appropriate.

1 *B* 102. The electronic inventory system of claim 101, wherein said tag reader can initiate
2 an immediate read of said passive RFID tags, a specific RFID tag read, or a timed broadcast read
3 of said passive RFID tags.

1 103. The electronic inventory system of claim 101, wherein at least one of said plurality
2 of RFID tags has a sensor.

1 *SUB E3* 104. An automated, real-time electronic inventory system, comprising a plurality of
2 passive RFID tags and a tag reader that performs multiple reads of said passive RFID tag to avoid
3 time slot contention.

1 105. An electronic article surveillance system, comprising:
2 a database having stored therein an inventory of merchandise, wherein each piece
3 of merchandise has associated therewith a tag identification;
4 a tag, wherein said tag is configured to be attached to said merchandise, said tag
5 having associated therewith a tag identification;